National Park Service Director Robert Stanton *launched the Natural Resource Challenge in a speech at Mount Rainier on the occasion of the national park's centennial in Washington state.*

In previous issues of the Year in Review, *"New Horizons" has often referred to the development and intelligent use of technological, administrative, and legal tools for the protection of park natural resources. It still does. This year, however, and perhaps for several years to come, it also means the promise of greater fiscal and human resources to meet the many challenges ahead. This is because of the Natural Resource Challenge, a five-year budget initiative and NPS commitment to increase the use of science in park management. Launched in August 1999, the Challenge comes at a time when concerns about ecosystem integrity are high and resource preservation issues complex. In its first year (FY 2000), the Challenge is enabling quicker acquisition of park natural resource inventories, improved management of biological and geological resources, and targeted efforts to eradicate exotic species. Many other program enhancements are planned over the next four years. If fully implemented over this time, the Challenge will provide a good foundation for the professional care of park natural resources. It is a source of optimism and will help the National Park Service progress toward new horizons in resource management.*

Future of Natural Resource Stewardship

Natural Resource Challenge addresses natural resource protection needs

by Abigail Miller and Douglas K. Morris

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On 12 August 1999, NPS Director Robert Stanton made a major announcement on the occasion of Mount Rainier National Park's 100th birthday. From the majestic mountain at Paradise, he proclaimed the National Park Service's strong new commitment to improving its preservation of the national park system's natural heritage through a five-year action plan called the "Natural Resource Challenge."

The efforts leading up to the August announcement have been termed an "internal conversation," and reflect the involvement of many participants. From the outset, there has been little difficulty in naming the natural resource preservation issues and outcomes desired. The difficulty was how best to achieve the outcomes.

The endeavor had its genesis in the ideas presented in Richard Sellars' 1997 book, *Preserving Nature in the National Parks: A History* (Yale University Press). Sellars observed that, throughout its history, the National Park Service has focused on visitor accommodation to the detriment of natural resources. His carefully researched and documented case became a catalyst for action. In addition, many other evaluations, including Starker Leopold's 1963 report and National Research Council reports in 1963 and 1992, chaired respectively by William Robbins and Paul Risser, confirm that park resources are being compromised in ways both understood and still unknown. The Director and the NPS National Leadership Council seized the moment and made a substantial response.

> "The Challenge is a set of goals that ... assert improved management of national parks through a greater reliance on scientific knowledge and expanded sharing of knowledge."

Developing an action plan has taken some time. Beginning in January 1998, a task force appointed by the regional directors developed the first report, outlining a wide range of issues, problems, and possible solutions. After much discussion, the report was revised and a plan assembled to develop the report's themes into actions that could be implemented. Twelve work groups led by superintendents and specialists developed draft action plans. The results were consolidated into the Natural Resource Challenge, a single action plan that combines related and overlapping actions and, of necessity, omits some to meet a budget target deemed

Among the many officials *attending the Mount Rainier centennial celebration were (from left) Congressman Norman Dicks (member of the House Appropriations Subcommittee on Interior) and NPS Director Robert Stanton, who announced the Natural Resource Challenge.*

reasonable to request. The additional budget for the five-year action plan totals about $100 million above the FY 1999 natural resource budget of $107 million—a doubling of budget capability. The Challenge, as it is called, is posted on the Web at www.nature.nps.gov/challengedoc.

The FY 2000 budget was formulated partway through the evolution of the Challenge. As a result, the FY 2000 request included actions about which there was broad agreement and little question about implementation. First, the FY 2000 request proposed funding to complete all of the Park Service–funded basic natural resource inventories. Another major request provided for a national biological resource management program, including a substantial commitment to field-based teams to combat exotic species. Smaller requests were made for increased project funding for natural resource management, broader expertise in geologic resource disciplines other than minerals management, California desert restoration, and Resource Protection Act implementation capability. All except the last two were successful—they were funded at 88% of the requested level—bringing the total funding for the Challenge to $14.329 million in FY 2000.

Although all participants in the process sent a clear message about the need for additional fiscal and personnel resources, the action plan was carefully constructed to be more than a budget initiative and therefore not entirely budget-dependent. The Challenge is a set of goals that collectively assert improved management of national parks through a greater reliance on scientific knowledge and expanded sharing of knowledge. Sustaining the early success of the FY 2000 budget, however, depends also on energy and commitment in the day-to-day work of the parks. Toward that end, the director has appointed a council of park superintendents to lead the way.

To fully implement the Challenge requires a different image of NPS employees—by themselves and by others. It requires that superintendents be viewed by their partners, congressional delegation, and others as much for their advocacy of resources as they are for seeking funding to repair or build new infrastructure. For interpretive rangers and others who serve visitors, it means persuasive and constructive information relayed to visitors about threats to resource values and what can be done to address them. It means park law enforcement programs that emphasize resource preservation and that are based on an understanding of which resources are threatened and effective means to address such threats. Likewise, it means facilities that are developed and maintained in a manner that is gentle to park resources. Finally, it means a full commitment to environmental leadership.

Thrusts of the Natural Resource Challenge

- Protecting and restoring native and endangered species and their habitats
- Controlling nonnative species
- Abiding by environmental laws and applying high environmental standards to park operations
- Expanding efforts to monitor and understand air quality in parks
- Monitoring and protecting park waters, watersheds, and aquatic life
- Accelerating acquisition of basic inventories of park natural resources
- Monitoring changes in the condition of park natural resources
- Collaborating to acquire, apply, and disseminate scientific knowledge in pursuit of natural resource goals
- Basing all NPS planning on a thorough understanding of resources
- Facilitating broad scientific inquiry for the betterment of both parks and society
- Expanding and improving opportunities for the public to enjoy and learn about park natural resources and their preservation
- Developing professional and technically proficient park staffs (see following article on Resources Careers)

Managing Natural Resource Personnel

Resources Careers implemented

by Kathy M. Davis

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The first action of the Natural Resource Challenge, Resources Careers, was implemented by Director Stanton on 17 December 1999 to help the Park Service fairly and effectively manage and develop its natural and cultural resources personnel. The National Park Service realizes that if park resources are to be managed effectively, superintendents must have easy access to advice from resource professionals, and the resource management tools available to them must be increased. The Natural Resource Challenge stresses that the NPS workforce must have the appropriate professional, technical, and leadership skills to identify resource issues; obtain, interpret, and apply scientific information; and solve highly technical and complex policy problems. It also states that development programs for field staffs must be strengthened so that they can contribute effectively to the resource preservation mission, and that they must have opportunities to advance and achieve upper-level management positions. Resources Careers, which was begun in 1994 by the Careers Council of the Vail Agenda, provides the personnel management tools to carry out the Natural Resource Challenge.

The most important feature that Resources Careers establishes is a career ladder of GS-5/7/9/11 for 24 professional resource management positions, which will be the norm throughout the National Park Service. Following extensive field reviews, human resource advisors found that GS-11 was the minimum full performance level for professional resource management positions. The career ladder offers an entry level with the opportunity for professional development and career growth.

> "Resources Careers ... provides the personnel tools to carry out the Natural Resource Challenge."

A total of 81 benchmark position descriptions (PDs) for professional (GS-5/7/9/11; GS-12) and technician (GS-5, GS-6, and GS-7) jobs were written precisely for the specialized resource expertise needed by the National Park Service. Collectively, the PDs, which cover the academic disciplines for work done in the National Park Service, allow managers to create effective position management plans for existing and future resource management divisions. Supervisors can avoid the generalized lumping that created the "GS-401 natural resources specialist" occupation and acknowledge that the Park Service needs botanists, biologists, fisheries biologists, hydrologists, physical scientists, and other applied specialists in addition to resource program managers. The Resources Careers Committee looked to the cultural resources disciplines as a model for using applied specialists, such as archeologists, curators, historians, archivists, and librarians.

Resources Careers is designed to be flexible by adding or editing position descriptions in the future. It is the foundation that describes the type of work done by the National Park Service and sets the grade value of that work. When the initiative started six years ago, chief of resource management positions were filled at the GS-7/9 level. Now they are typically GS-9/11 or above in recognition of their complexity. Supervisors are reappraising current positions as being either program managers or applied specialists and using the correct series for the expertise needed. Technician position descriptions have pointed out inappropriately assigned work, beyond an employee's grade level, and incumbents have been upgraded to be compensated for the demands of the job. These examples demonstrate the positive impact Resources Careers has already had on improving the development and management of professional staff to meet the needs of complex resource management issues in the parks.

Extensive position management guidance, including all of the PDs and the career ladders, is featured on the NPS Natural Resources Intranet website at www1.nrintra.nps.gov/careers/. Additionally, each park will receive a manual that explains the new personnel management tools.

Strengthening Natural Resource Leadership

Natural resources law and policy course revived for superintendents

by Carol McCoy, Bob Karotko, and Sharon Kliwinski

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Calendar year 1999 marked the reintroduction of the Natural Resources Protection Law and Policy Course for Superintendents, one of several natural resources courses funded by the Horace M. Albright Training Center. The center, working closely with staff at the Natural Resource Program Center, organized and conducted this dynamic and rigorous course for park superintendents in Salt Lake City in May 1999, and then again in Washington, D.C., in September. Nearly 50 superintendents enrolled in the course. Assessments of the course in the two locales included: "Relevant and an intellectual challenge directly related to our work." "Excellent course!" "Presenters were knowledgeable and passionate about the subject matter." And, "I'll be far more conscientious when applying NPS Management Policies."

Several NPS litigation losses pointed to the need to reestablish the course to better equip park managers to make sound, defensible decisions. The course also responds, in part, to congressional direction contained in the National Parks Omnibus Management Act of 1998, calling for park managers to always enhance their competencies.

The 32-hour course provides park managers with a fundamental understanding of their overarching legal and policy mandates to advance park protection and of the ABCs of litigation. Special emphasis is placed on the statutory provisions of the NPS Organic Act and the body of case law pertaining to park management action. Class participants also explore other resource protection tools through a combination of presentations, case studies, and small group discussions.

The pivotal role that park managers play in litigation is a recurring theme in the course. The course covers the importance of the administrative record in the outcome of litigation and provides insight into the strategic thinking involved in the federal government's response to a lawsuit. Class participants come away with an understanding of why not all lawsuits end up in court trials. This insight extends beyond the natural resource protection arena to operations, cultural resources protection, maintenance, and planning. Participants learned that the legal field is permeated with policy choices, and that it is not only critical to have the administrative record in order but also advantageous to seek out legal counsel early and often.

"The course covers the importance of the administrative record in the outcome of litigation."

Instructors in 1999 included Dave Watts, then deputy associate solicitor for parks and wildlife in the Department of the Interior Office of the Solicitor in Washington, D.C., and now assistant to the solicitor for Everglades and special projects; Pete Raynor, then assistant solicitor for fish and wildlife and now deputy associate solicitor for parks and wildlife; K. C. Becker, an attorney with the Solicitor's Office; Bill Lockhart, a distinguished law professor at the University of Utah and a proven park protection advocate; Tom Kiernan, executive director of the National Parks and Conservation Association (NPCA); Don Barger, NPCA southeast regional director; and managers and staff from the NPS Natural Resources Program Center.

The quality of instruction and the relevant course material led one superintendent to remark, "This course should be mandatory for every superintendent!" The Albright Training Center now offers the course annually.

Emphasizing Resource Protection

SUWA case has ramifications for NPS management policies

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In 1998, the Southeast Utah Wilderness Alliance (SUWA) prevailed in federal district court in Utah, vacating an NPS decision to keep open a popular four-wheel-drive road in Canyonlands National Park (see the related story on page 13 of the *Natural Resource Year in Review—1998).* Not initially a big case, this issue has had significant consequences for the Park Service as a whole, and has influenced the revision of NPS management policies for the protection of natural and cultural resources.

In early 1999 the draft management policies were under internal review. The draft included wording that would require managers to err on the side of resource protection when making decisions that pit visitor enjoyment against resource preservation. This refuted the "balancing test" that many NPS managers believe applies to their decision-making process. The notion of a balancing test stems from the 1916 NPS Organic Act, which states that the fundamental purpose of the parks is "to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

Variations in the interpretation of this clause have led to inconsistency across the national park system in the way decisions have been made. Some managers view this clause as requiring them to give equal weight to resource conservation and public enjoyment. Others believe it gives them discretionary authority to favor either conservation or public enjoyment. The draft policy language was intended to bring more consistency to NPS decision making by adopting a single interpretation that the dual objectives of resource protection and public enjoyment do not carry equal weight, because public enjoyment cannot be sustained if park resources are unacceptably damaged or compromised.

However, neither the balancing test nor the draft language adequately took into account one of the most important phrases in the Organic Act: "unimpaired for the enjoyment of future generations." The importance of this phrase was driven home when the court ruled the National Park Service has no authority to allow activities that permanently impair park resources. Internal deliberations over a possible appeal forced the Park Service to more thoughtfully examine its position. Ultimately, the Park Service did not appeal the court's basic finding that, when the law says "unimpaired," it means unimpaired. Instead, the finding was accepted as a valid—albeit alternative—basis to conclude that, when there is a conflict between conservation and enjoyment, conservation is predominant.

> "When there is a conflict between conservation and enjoyment, conservation is predominant."

The new policies acknowledge that providing opportunities for public enjoyment is a fundamental part of the NPS mission. But they emphasize that recreational and other activities, including NPS management activities, may be allowed only when they will not cause impairment or derogation of a park's resources, values, or purposes. The sole exception is when an activity that would cause impairment or derogation is directly and specifically mandated by Congress.

The most difficult challenge for NPS managers will be to determine when an otherwise allowable adverse impact crosses the threshold to become an impairment. This determination must be made as part of an environmental analysis, using insights provided by science.

The four-wheel-drive road *along Salt Creek in Canyonlands National Park (Utah) has become a symbol of the emphasis placed on resource preservation in the 1999 draft NPS Management Policies. The road was closed in 1998 after federal district court in Utah ruled the National Park Service has no authority to allow activities that permanently impair park resources.*

Sustaining Park Operations

NPS establishes environmental leadership program

by Shawn Norton and Dan Kimball

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For national park visitors, the promise of the parks is to reconnect their lives to the natural and cultural resources around them. Expectations also include the protection of the environment through sound management practices. Thus the activities of the National Park Service and its concessionaires must be sensitive to the park environment, in addition to the larger environment we all influence. To ensure this, the National Park Service must perform its operations in a sustainable manner. *Sustainability* has been defined as meeting the needs of the present without compromising the ability of future generations to meet their needs. This definition complements the language used by the founders of the National Park Service, with which they outlined a mission that conserves wildlife, scenery, and natural and historical objects, leaving them unimpaired for the enjoyment of future generations.

During 1999 the National Park Service was busy developing a comprehensive plan to realize this vision of sustainability through a new program called Environmental Leadership (for more information see www.nps.gov/renew/). Through this effort, the Park Service will educate its visitors by showcasing sustainability in building design and construction, energy and water usage, transportation, natural and cultural resource management, waste management, procurement, contracting, and concessions management. Tools are being developed to assist parks in meeting new sustainability goals, including reissuing the landmark NPS publication *Guiding Principles of Sustainable Design* (1995, second edition, D-902). Environmental compliance for the National Park Service and concession facilities and activities will also be stressed. To achieve this objective, the Park Service is implementing an environmental auditing program that will measure and track environmental performance at every park. This effort will result in enhanced natural resource protection and, as such, complement the Natural Resource Challenge.

The massive viewing platform *at Old Faithful Geyser in Yellowstone is constructed of recycled-content plastic, demonstrating to thousands of tourists daily the practicality of this tough and sensible wood alternative. Unilever Home and Personal Care–USA, in conjunction with a cost-share agreement with the park, obtained the plastic lumber, valued at over $300,000, which was produced from the equivalent of more than 4 million plastic milk jugs.*

The National Park Service has many existing park programs and projects that demonstrate environmental leadership. For example, the "Greening of Yellowstone" is an ongoing project designed to investigate all business practices taking place in the park for opportunities to practice sustainability. A cleaning-products substitution program has eliminated an inventory of 130 cleaning products, many of which are highly toxic, to just 20 environmentally preferable ones. A boardwalk restoration project at Old Faithful uses recycled-content plastic lumber that withstands environmental extremes better than wood. These efforts have also led to profound changes outside the park. For example, a creative recycling program has brought together nine counties and two states to more cost effectively reuse crushed glass. In another project, five counties have joined the Park Service to build a municipal waste-composting facility on U.S. Forest Service land that is managed by a private firm.

"*Sustainability* has been defined as meeting the needs of the present without compromising the ability of future generations to meet their needs."

Implementing the Environmental Leadership Program in the National Park Service will require a careful evaluation of every program and an effort by every NPS staff. From the cleaning of restrooms to the management of vehicle fleets, from conserving energy to ensuring environmental compliance, opportunities to practice sustainability and environmental leadership are everywhere. The leaders of the future will need to recognize these opportunities and the deeper connection between NPS actions and park resources. As a result, the NPS mission will become more recognizable to the public and make the National Park Service better stewards of the land.

Fueled by biodiesel *or rapeseed (canola) ethyl ester, this pickup truck has traveled more than 115,000 miles in and around Yellowstone since 1995, averaging 17 miles per gallon. Engine and fuel system modifications were not needed, and emissions of smoke, hydrocarbons, nitrogen oxide, and carbon monoxide were reduced compared to regular diesel.*

"Island Explorer" bus transportation on-line at Acadia

Acadia National Park inaugurated a new regional transit system in June 1999 that links neighboring communities to destinations throughout the park. Eight buses, operating on six routes, allow visitors to leave their cars at their hotels and campgrounds and visit the park aboard clean-burning propane buses. Called the Island Explorer, the free transit system is expected to reduce traffic congestion, overflow parking along roadways, and vehicle emissions on the island, while increasing visitor enjoyment of the area. Elsewhere in 1999, Zion National Park continued construction of its visitor transit facilities with plans to begin propane bus service in spring 2000. Also during the year, Yosemite became a partner in a demonstration bus system planned to start in May 2000; the Yosemite system will target both visitors and park employees to reduce traffic congestion and related problems. In early 2000, Grand Canyon selected business teams qualified to bid on the contract to develop the park's planned bus and light rail transit system.

Award-Winner Profile

Kathy Davis honored for contributions to Resources Careers

Kathy M. Davis, chief of resource management with the Southern Arizona Office (Phoenix), is the recipient of the Director's Award for Natural Resource Management. Given in September 1999, the award recognizes her leadership in the development and implementation of the NPS Resources Careers initiative. Under Kathy's leadership, the Resources Careers task force conceived, developed, and completed professional, career-ladder position descriptions and classification evaluation statements in natural and cultural resource series and interdisciplinary series. Her efforts affect every resource manager in the National Park Service by creating a framework for professionalization and success. Additionally, Kathy serves as an effective resource manager for 10 small parks in southern Arizona.

Kathy was humbled by the award and the realization that it marked the completion of a long, difficult, and crucial project. Asked to chair Resources Careers in 1994, Kathy did not "fully comprehend the size of the task ahead. From the start," she says, "there were delays and uncertainty with money and support. What kept us going were the hopes and expectations of resources staff for career improvements, a growing recognition of professional expertise needed in the National Park Service, and the dedication of committee members. While the award was given to me as chairperson, many clever, hard-working people were involved." Kathy hopes that Resources Careers "becomes institutionalized as the foundation for career paths to management or expertise in a resources field," but regrets that it was implemented without funding. "We need more high-level managers and specialists with academic expertise and credentials in resources and science to carry out the mission of the National Park Service."

Kathy's work as resource manager with the Southern Arizona Office has also been satisfying. Since 1985 she has seen resource management staff for southern Arizona parks increase from three to more than 25. "It has been rewarding to watch the natural and cultural resources program grow and become more professional over the years," Kathy says. She considers Bill Halvorson (see page 31) of the USGS Sonoran Desert Field Station a tireless and caring colleague who has enhanced this professionalism and helped improve regional science and management in the national parks.

Collaborative Decision Making

From local to regional: A new focus for air resources protection

by Bruce Polkowsky

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On 1 July 1999, the Environmental Protection Agency (EPA) promulgated new regulations that will require state governments to improve visibility in 48 parks that are designated Class I under the Clean Air Act. These new regulations bring a sweeping change to the process of visibility protection, which until now focused only on resolving visibility impairment that could be traced to specific sources and new source-permitting reviews.

The thrust of the new regulations is a 60-year planning path to return visibility conditions to "natural." The states must implement, in 10-year steps, emission-control actions that decrease regional haze to the point that it represents no human-caused impairment. The states may take into account the costs of emission controls as well as the availability of techniques to reduce visibility impacts in developing their control plans. In addition, they must determine the appropriate control levels for certain older major stationary sources of emissions and implement those controls within the first 10-year plan period.

Although this sounds simple enough, the key is that visibility impairment is caused, for the most part, by very fine particles. Some particles form in the atmosphere from "invisible" gaseous pollutants such as sulfur dioxide and nitrogen oxides. These fine particles can also travel hundreds of kilometers, well beyond state borders. Herein lies the new regulatory challenge: having the individual state plans under the Clean Air Act address a regional problem.

Enhanced protection for Yellowstone bison and thermal features

The federal government announced plans in 1999 to increase the protection of Yellowstone's bison, geysers, and hot springs when it agreed to acquire title to, and conservation easements on, 9,300 acres of the Royal Teton Ranch north of Yellowstone National Park. In addition, the government will acquire geothermal water rights to the entire 12,000-acre ranch. The land will be managed by the Gallatin National Forest and will provide important winter range for bison. Bison often leave the park in winter when food is difficult to reach and face unnecessary killing by the State of Montana to prevent any possibility of the spread of brucellosis from bison to domestic cattle even though there have never been any documented cases of such transmissions in the wild. The move will also prevent development of geothermal resources on the ranch that could have a deleterious effect on park thermal features. The government agreed to pay $13 million for the deal, which was still being prepared at year's end.

In this composite view of Shenandoah National Park (Virginia), *the right portion is a photograph that represents the 20% most impaired visibility days according to current monitoring data. The majority of haze seen in this photo is caused by sulfate particles resulting from combustion of coal. The left portion is a photograph of monitored conditions representing the estimated 60-year goal for improving the most impaired days under the new regional haze rules.*

New Horizons

The EPA has encouraged states to coordinate planning through five "regional planning" bodies covering all of the contiguous 48 states. States that do not contain Class I areas and have never addressed the issue will now need to implement regulatory plans to address impacts at parks and other Class I areas in distant states. In the eastern United States, where there is severe visibility impairment, the scope of emissions changes needed to attain natural conditions is daunting. However, there are other programs, including the EPA's new health standards, which are also expected to require major emissions reductions.

"Issues such as defining 'natural conditions,' including the role of fire, will require that new analytical techniques be developed."

The new regulations bring to light new questions for NPS management, too. How will the National Park Service coordinate with these five planning bodies? On the technical side, issues such as defining "natural conditions," including the role of fire, will require that new analytical techniques be developed. What are the roles of the Air Resources Division, regional offices, and individual parks in helping the states develop regulatory plans? The National Park Service will need to answer these questions before the first 10-year plans are due.

The Air Resources Division has already expended considerable resources in working on a plan for western states through the Grand Canyon Visibility Transport Commission and its successor, the Western Regional Air Partnership. Whether that effort will be the model for other regional efforts will depend on resources and the types of regulatory plans the states pursue. In any case, the technical and policy work will need to be addressed soon. The first 10-year plans must be in place between 2003 and 2008, depending on the region of the country and certain planning options open to the states. These plans will be the first step in a process that promises dramatic visibility improvement in many parks.

Award-Winner Profile

Joe Dunstan recognized with sustainability award

Joseph Dunstan is the sustainability coordinator for the Pacific West Region and recipient of the 1998 Director's Award for Excellence in Natural Resource Stewardship Through Maintenance, given in 1999. Joe is a leader in promoting sustainable practices and opportunity planning (SPOP) in parks. Through the SPOP process, he has been able to increase the role of sustainability in two parks, Fort Vancouver National Historic Site and Joshua Tree National Park, by conducting team evaluations of such park operations as maintenance, concessions and visitor services, handling of waste, and energy uses. The team of NPS staff, mechanical engineers, and sustainable design consultants identified resources flowing into the parks, described how the activities of staff and visitors altered those resources, and explored ways that parks can incorporate additional sustainable practices into their daily routines.

Joe is pleased that recognition of the SPOP process has resulted in better partnership between maintenance staff, resource managers, rangers, and interpreters. "Sustainability is not just the responsibility of maintenance," he says. "It involves purchasing, office practices, reducing solid waste in landfills, innovative research to better understand human interaction with ecological systems, and visitor education." He adds, "I sense a great deal of enthusiasm for implementing sustainable practices in the field. Managers need to unleash this spirit, recognize and reward innovative work, and support employees who take risks. The most important task," he says, "is fostering and building a workforce that is willing to try new products and implement new practices to achieve sustainability."

Cleaner air for Grand Canyon and the West

In 1999 the Navajo Generating Station, in Page, Arizona, completed construction of three scrubbing units based on a negotiated agreement witnessed by President Bush at Grand Canyon National Park in 1991. These scrubbers will reduce sulfur dioxide emissions by approximately 55,000 tons per year. Also in 1999, agreement was reached to reduce sulfur dioxide emissions from the Mohave Generating Station, in Laughlin, Nevada, by approximately 40,000 tons per year by 2007. Both of these actions, while specifically aimed at improving visibility at Grand Canyon, lay the foundation for future plans to address regional haze in the West.